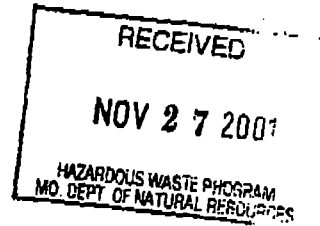


STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**  
DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

November 26, 2001

CERTIFIED MAIL 7099 3220 0009 3713 2894  
RETURN RECEIPT REQUESTED

Mr. Jeffrey Zelms, President  
The Doe Run Resources Corporation  
d/b/a the Doe Run Company  
1801 Park 270 Drive, Suite 300  
St. Louis, MO 63146



Dear Mr. Zelms:

On October 11, 2001, staff of the Missouri Department of Natural Resources' Environmental Services Program collected a water sample from a drainage below a stormwater outfall for the City of Herculaneum near the City's wastewater treatment plant. The purpose of this investigation was to determine if contaminants were leaving trucks traveling to and from the Doe Run facility and entering waters of the state by way of stormwater runoff from Doe Run haul roads.

The results of the water sample showed a dissolved lead level of 490 µg/L. Discharge of this contaminant constitutes violations of the Missouri Clean Water Law Sections 644.051(1) and 644.076.1, RSMo and 10 CSR 20-7.031. The enclosed Notice of Violation No. 30740 is hereby issued to enumerate these violations and to serve as your official notice that violations exist.

It is our purpose by this Notice of Violation to persuade you to take steps to eliminate the violations. If you have any questions, please contact me at (573) 751-1740.

Sincerely,

WATER POLLUTION CONTROL PROGRAM

A handwritten signature in black ink that reads "Kevin Mohammadi".

Kevin Mohammadi, Chief  
Enforcement Section

KM:swm



40338791



Superfund



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL QUALITY  
**NOTICE OF VIOLATION**

P.O. BOX 178  
JEFFERSON CITY, MO 65102

VIOLATION NUMBER

**50042**

DATE AND TIME ISSUED

November 26, 2001

☐ A.M.☐ P.M.

SOURCE (NAME, ADDRESS, PERMIT NUMBER, LOCATION)

Doe Run Resources Corporation d/b/a The Doe Run Company

Herculaneum Smelter 881 Main St.

Herculaneum, MO 63048

MAILING ADDRESS

1801 Park 270 Drive Suite 300

CITY

St. Louis

STATE

MO

ZIP CODE

63146

NAME OF OWNER OR MANAGER

Jeffrey Zelms

TITLE OF OWNER OR MANAGER

President

LAW, REGULATION OR PERMIT VIOLATED

Missouri Clean Water Law Sections 644.051(1) and 644.076.1 RSMo and 10 CSR 20-7.031

NATURE OF VIOLATION

DATE(S):

TIME(S):

On October 11, 2001 a sample of storm water was collected from a stormwater outfall near the wastewater treatment plant in the City of Herculaneum. This stormwater outfall discharges stormwater collected from Station Street which is a part of the Doe Run smelter concentrate haul roads. The results of this sample exhibited violations of the Water Quality Standards for dissolved lead. This constitutes causing pollution of waters of the state and violation of the Water Quality Standards.

SIGNATURE (PERSON RECEIVING NOTICE)

SIGNATURE (PERSON ISSUING NOTICE)

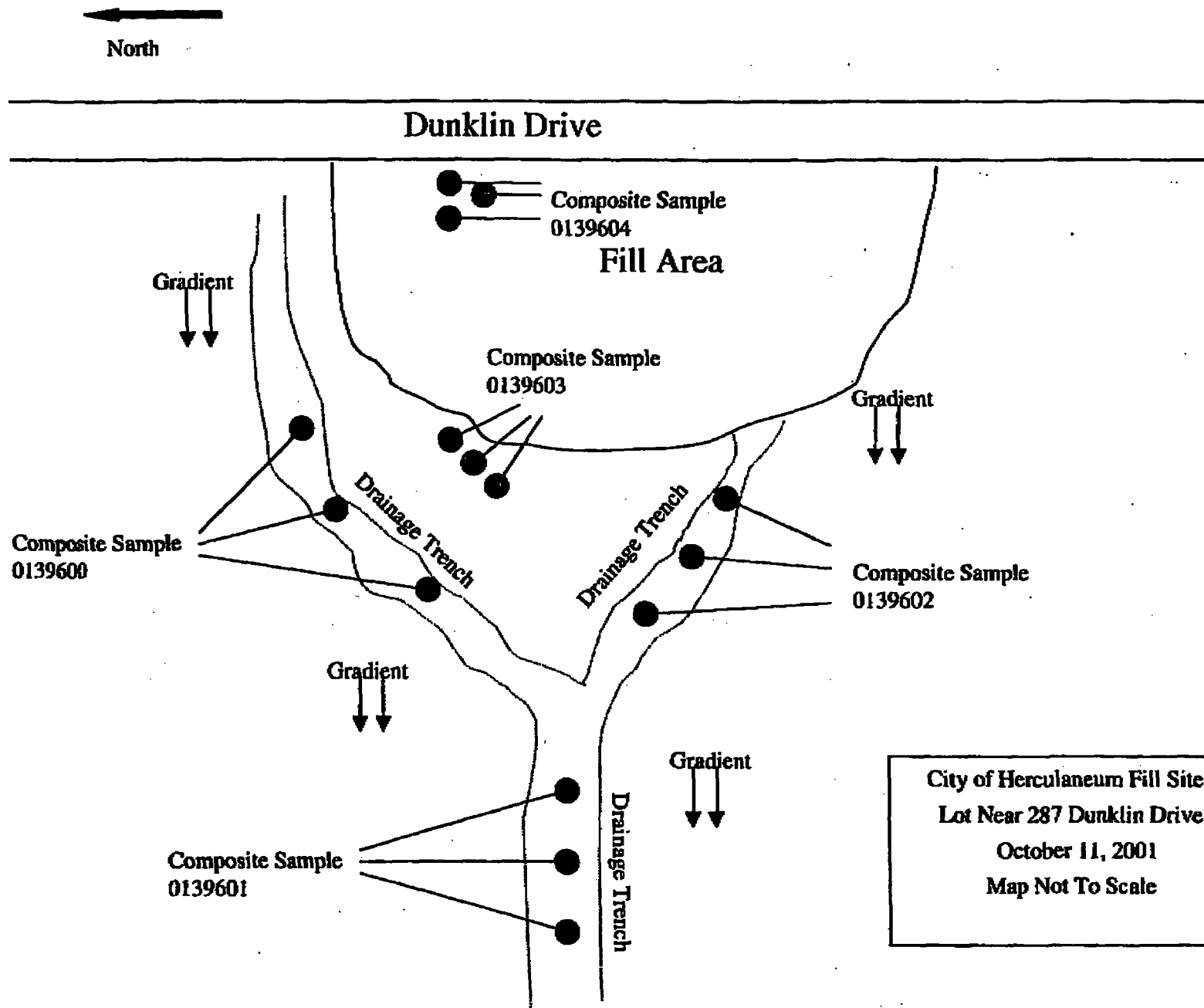
TITLE OR POSITION

TITLE OR POSITION/DNR REGION

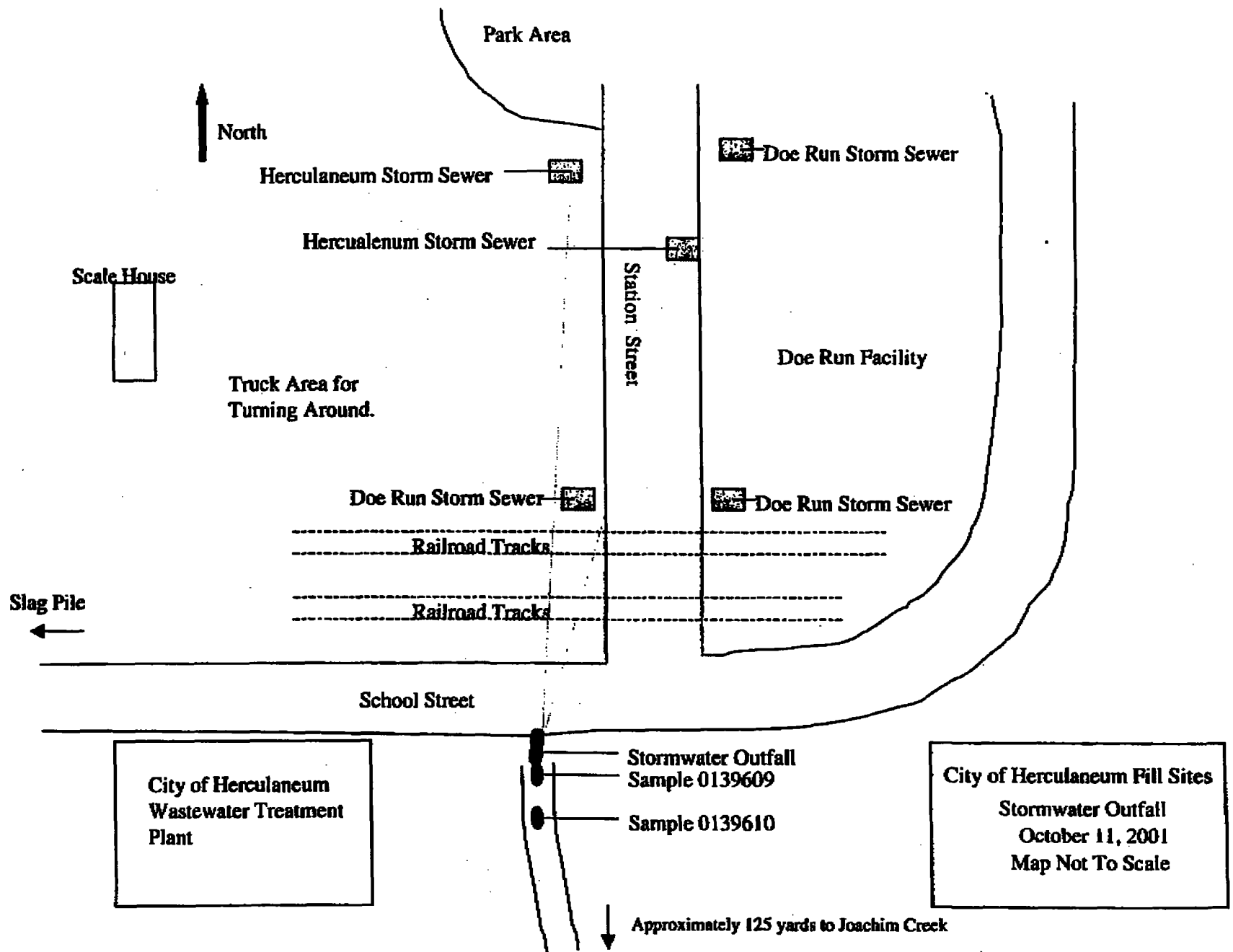
Kevin Mohammadi, Chief, Enforcement Section

**Appendix B**

**Sample Maps  
City of Herculaneum Fill Sites  
Herculaneum, Missouri  
October 11, 2001**





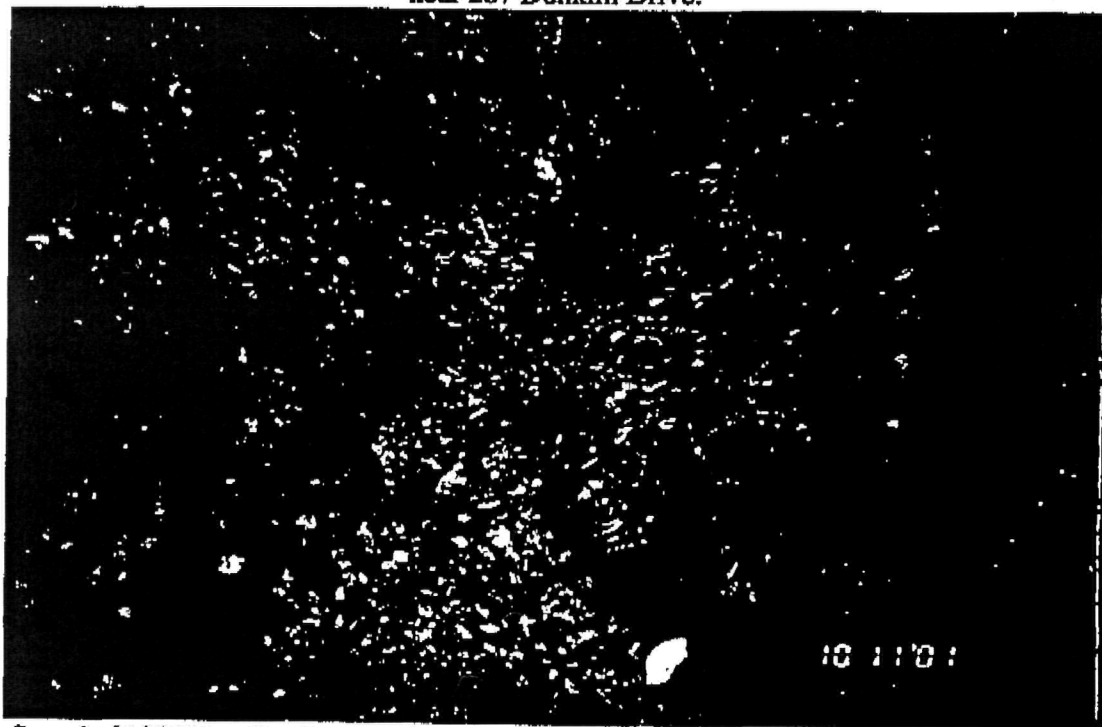


**Appendix C**

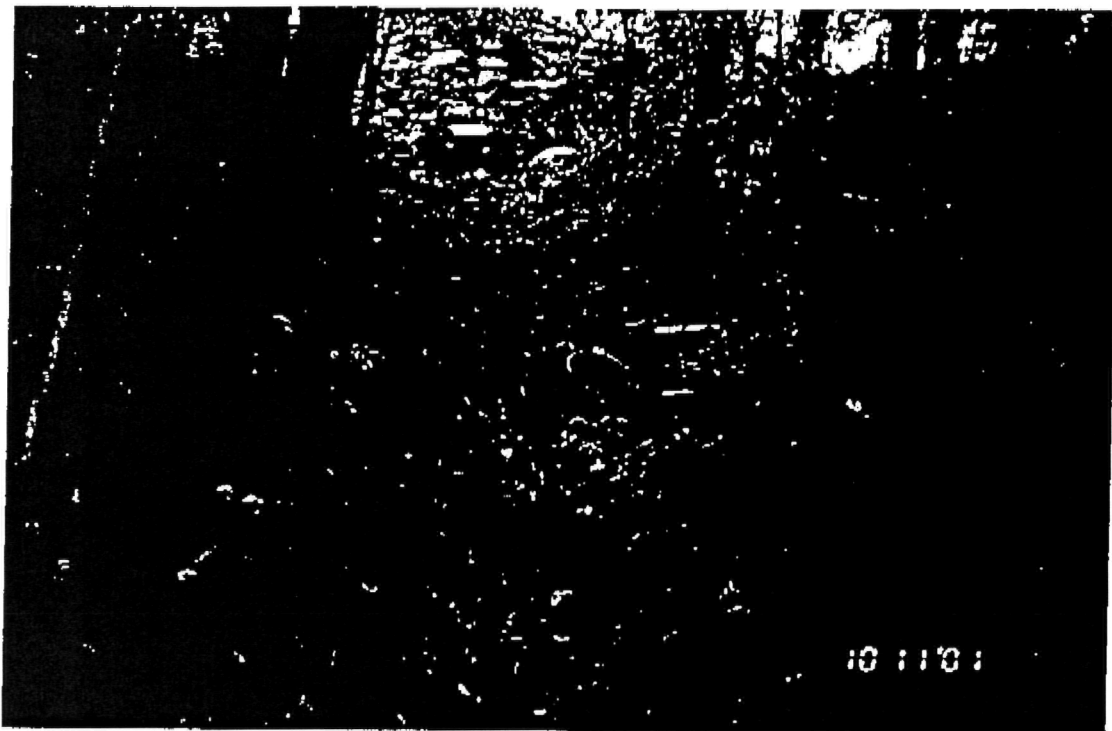
**Photographs  
City of Herculaneum Fill Sites  
Herculaneum, Missouri  
October 11, 2001**



Sample 0139600 – Drainage trench located on the north side of the fill area on the lot near 287 Dunklin Drive.



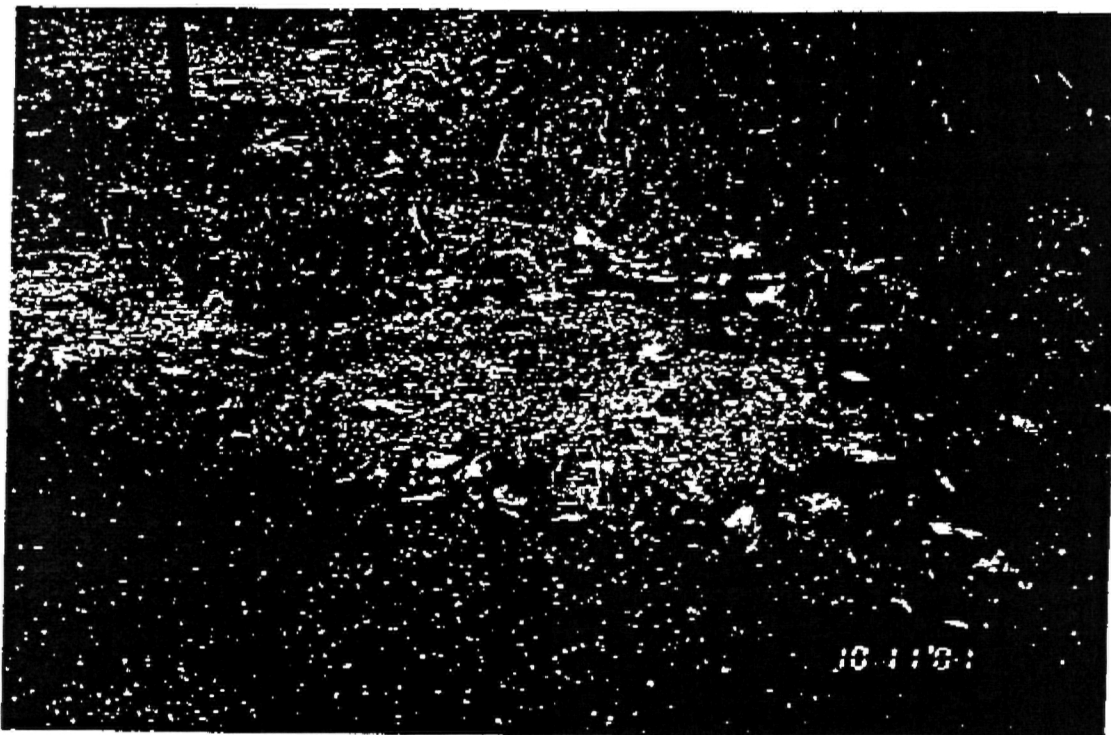
Sample 0139601 – Confluence of the two drainage trenches below the fill area on the lot near 287 Dunklin Drive.



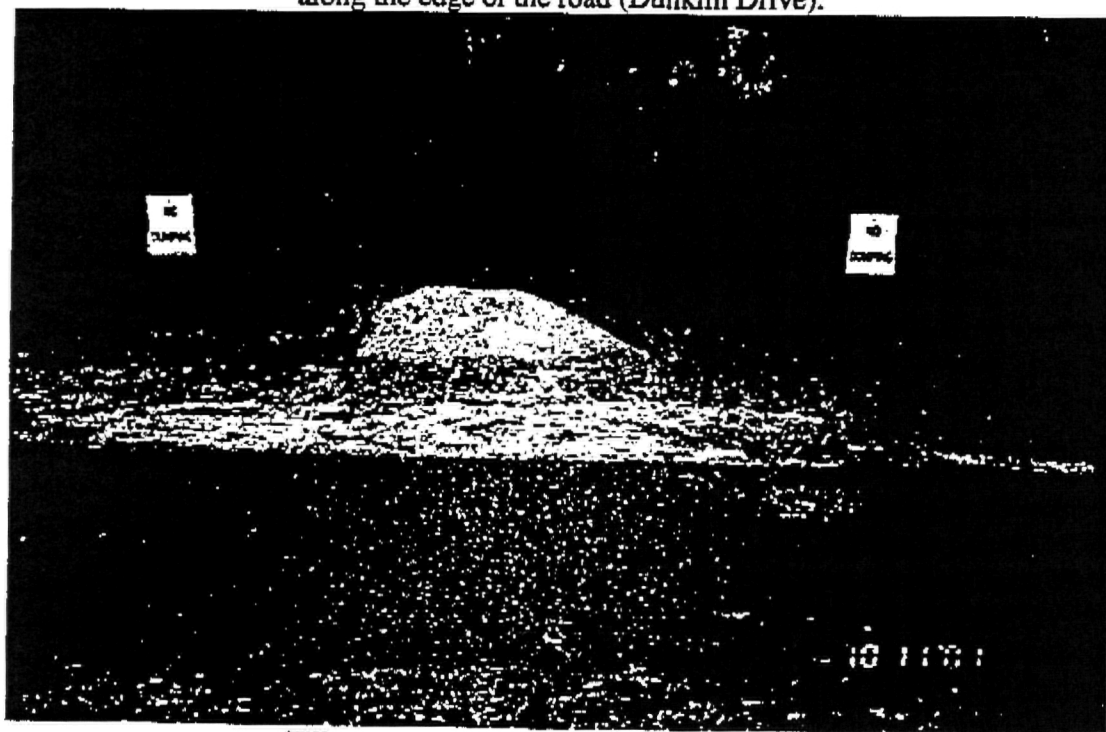
Sample 0139602 – Drainage trench from the south section of the fill area on the lot near 287 Dunklin Drive.



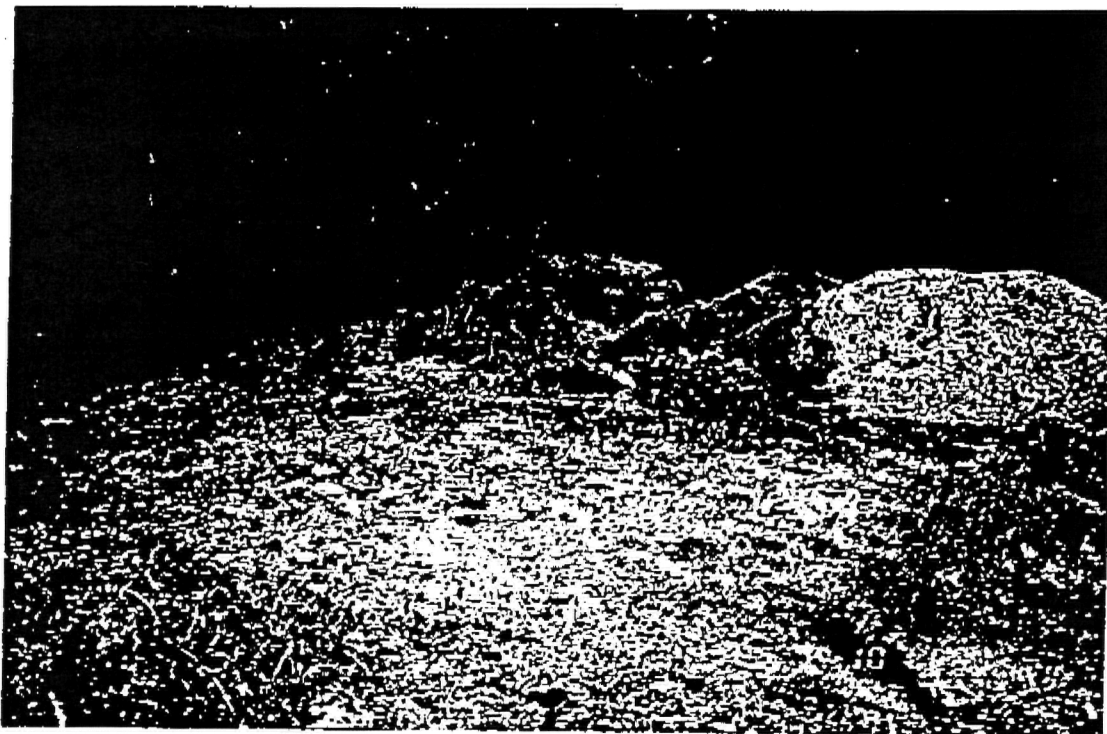
Sample 0139603 – Downgradient edge of the fill area on the lot near 287 Dunklin Drive.



Sample 0139604 – Fill area on the lot near 287 Dunklin Drive. Sample was collected along the edge of the road (Dunklin Drive).



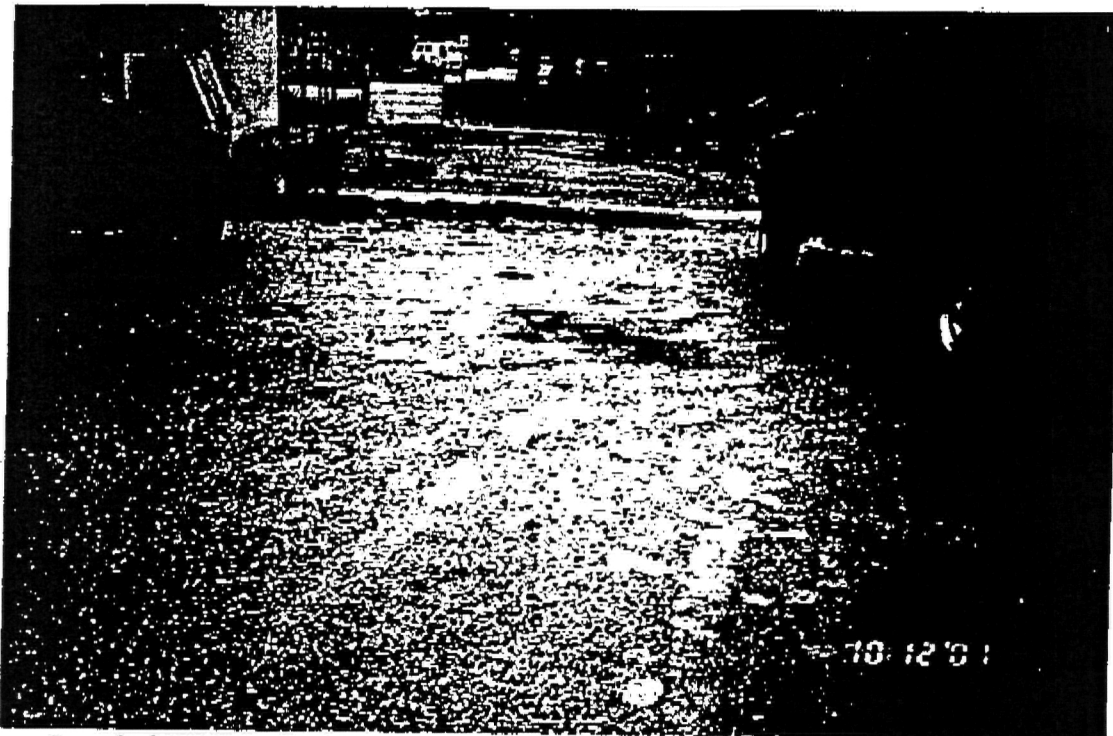
Fill area on the lot near 287 Dunklin Drive.



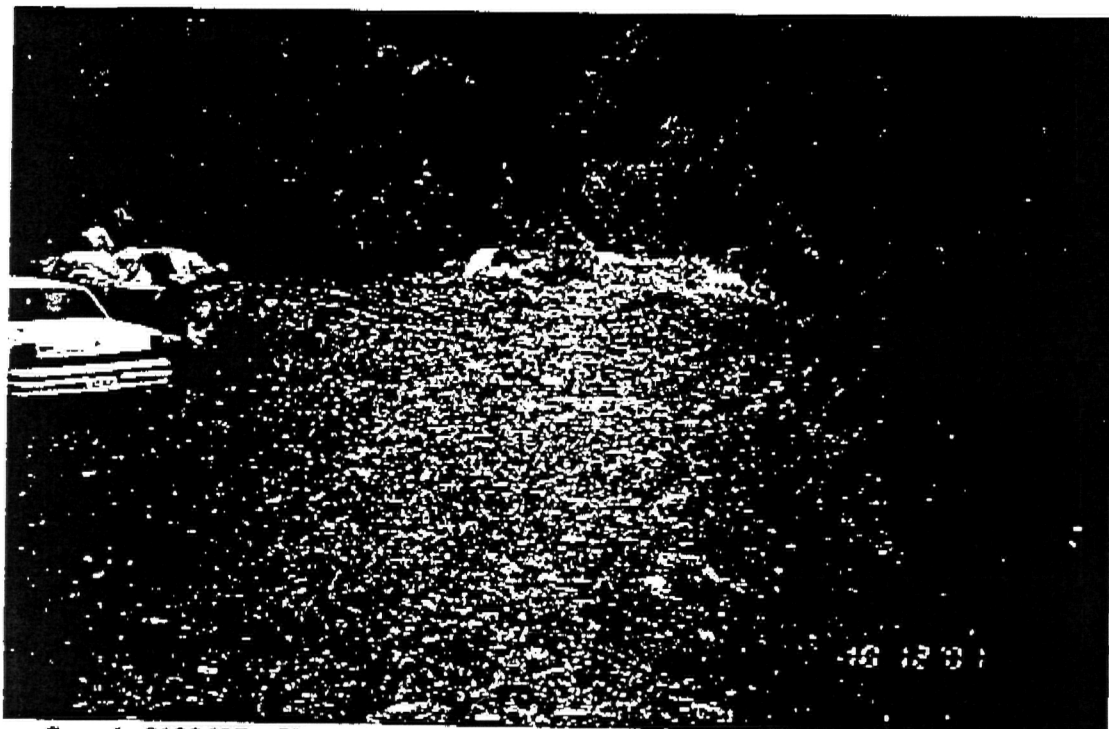
Fill area on the lot near 287 Dunklin Drive.



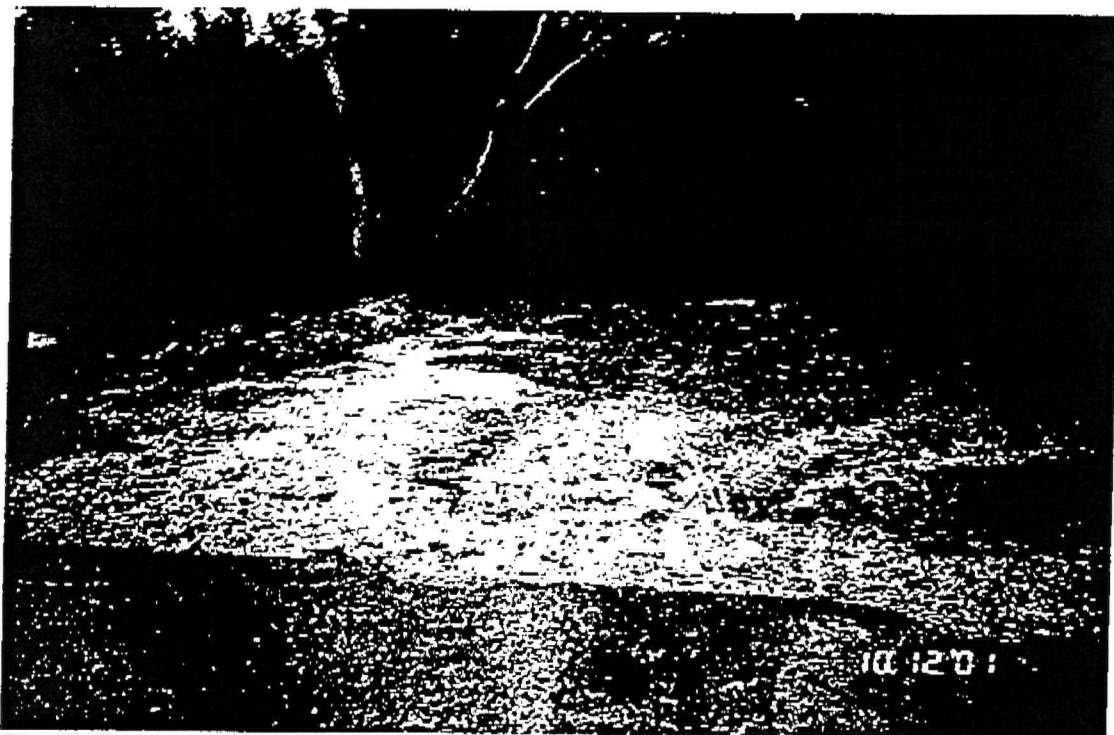
Sample 0139605 - Approximately 80 yards north of the fill area on the lot near 287 Dunklin Drive.



Sample 0139606 – Parking lot located at the intersection of Long and Hill Streets.



Sample 0139607 – Upgradient portion of the fill area located at 468 Groove Street.



Sample 0139608 – Upgradient portion of the fill area located at the intersection of School and Dale Streets.

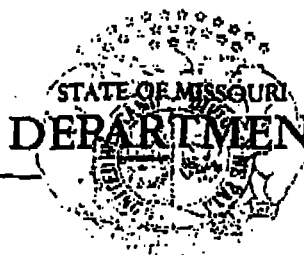




Samples 0139609 and 0139610 collected from this stormwater outfall area. Photograph was taken on October 22, 2001, by Matt Ojile.

**Appendix D**

**Analytical Results  
City of Herculaneum Fill Sites  
Herculaneum, Missouri  
October 11, 2001**



Bob Holmes, Governor • Stephen M. Mahood, Director

# DEPARTMENT OF NATURAL RESOURCES

 DIVISION OF ENVIRONMENTAL QUALITY  
 P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

### RESULTS OF SAMPLE ANALYSES

Sample Number:	0139600
Lab Number:	01-D4019

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: LOT NEAR 287 DUNKLIN DRIVE  
 NORTH DRAINAGE FROM FILL AREA  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	9,330	ug/kg	10/16/01	206.2
Barium, Total	207,000	ug/kg	10/16/01	200.7
Cadmium, Total	6,170	ug/kg	10/16/01	200.7
Chromium, Total	34,400	ug/kg	10/16/01	200.7
Mercury, Total	55.1	ug/kg	10/18/01	245.1
Lead, Total	385,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Lead, TCLP	0.18	ppm	10/19/01	239.2

Page 2

Lab Number: 01-D4019

Sample Number: 0139600

October 19, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

*Earl Pabst.*

Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holden, Governor - Stephen M. Mahood, Director

# DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

### RESULTS OF SAMPLE ANALYSES

Sample Number: 0139601  
Lab Number: 01-D4020

Reported To: LARRY LEHMAN  
Affiliation: ESP  
LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
Date Collected: 10/11/01  
Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
Sampling Location: HERCULANEUM  
Sample Description: LOT NEAR 287 DUNKLIN DRIVE  
CONFLUENCE OF TWO DRAINAGES  
County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	8,160	ug/kg	10/16/01	206.2
Barium, Total	241,000	ug/kg	10/16/01	200.7
Cadmium, Total	8,040	ug/kg	10/16/01	200.7
Chromium, Total	26,900	ug/kg	10/16/01	200.7
Mercury, Total	77.2	ug/kg	10/18/01	245.1
Lead, Total	752,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Lead, TCLP	0.10	ppm	10/19/01	239.2

Page 2

Lab Number: 01-D4020

Sample Number: 0139601

October 19, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holden, Governor • Stephen M. Mahood, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number:	0139602
Lab Number:	01-D4021

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: LOT NEAR 287 DUNKLIN DRIVE  
 SOUTH DRAINAGE FROM FILL AREA  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	7,510	ug/kg	10/16/01	206.2
Barium, Total	194,000	ug/kg	10/16/01	200.7
Cadmium, Total	58,400	ug/kg	10/16/01	200.7
Chromium, Total	28,200	ug/kg	10/16/01	200.7
Mercury, Total	55.4	ug/kg	10/18/01	245.1
Lead, Total	651,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Cadmium, TCLP	0.05	ppm	10/19/01	200.7
Lead, TCLP	0.16	ppm	10/19/01	239.2

Page 2

Lab Number: 01-D4021

Sample Number: 0139602

October 19, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

*Earl Pabst*

Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP





Bob Holden, Governor • Stephen M. Mahood, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number:	0139603
Lab Number:	01-D4022

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: LOT NEAR 287 DUNKLIN DRIVE  
 DOWNGRADIANT EDGE OF FILL AREA  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	7,460	ug/kg	10/16/01	206.2
Barium, Total	530,000	ug/kg	10/16/01	200.7
Cadmium, Total	9,790	ug/kg	10/16/01	200.7
Chromium, Total	22,600	ug/kg	10/16/01	200.7
Mercury, Total	53.0	ug/kg	10/18/01	245.1
Lead, Total	1,240,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Barium, TCLP	0.81	ppm	10/19/01	200.7
Lead, TCLP	1.41	ppm	10/19/01	239.2

Page 2

Lab Number: 01-D4022

Sample Number: 0139603

October 19, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

*Earl Pabst*

Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holden, Governor • Stephen M. Mahfood, Director

# DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

### RESULTS OF SAMPLE ANALYSES

Sample Number: 0139604  
Lab Number: 01-D4024

Reported To: LARRY LEHMAN  
Affiliation: ESP  
LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
Date Collected: 10/11/01  
Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
Sampling Location: HERCULANEUM  
Sample Description: LOT NEAR 287 DUNKLIN DRIVE  
AREA ADJACENT TO DUNKLIN DRIVE  
County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	16,500	ug/kg	10/16/01	206.2
Barium, Total	266,000	ug/kg	10/16/01	200.7
Cadmium, Total	9,940	ug/kg	10/16/01	200.7
Chromium, Total	17,500	ug/kg	10/16/01	200.7
Mercury, Total	43.3	ug/kg	10/18/01	245.1
Lead, Total	2,540,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Lead, TCLP	1.43	ppm	10/19/01	239.2

Page 2

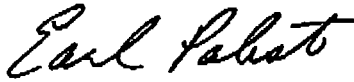
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Sample Number: 0139604

October 19, 2001

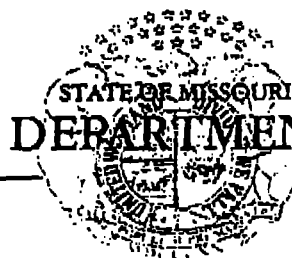
Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holden, Governor • Stephen M. Mahood, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number: 0139605
Lab Number: 01-D4025

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: LOT NEAR 287 DUNKLIN DRIVE  
 BACKGROUND APPROX. 80 YARDS NORTH  
 OF FILL AREA  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	6,030	ug/kg	10/16/01	206.2
Barium, Total	127,000	ug/kg	10/16/01	200.7
Cadmium, Total	5,480	ug/kg	10/16/01	200.7
Chromium, Total	20,800	ug/kg	10/16/01	200.7
Mercury, Total	86.7	ug/kg	10/18/01	245.1
Lead, Total	469,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Lead, TCLP	0.41	ppm	10/19/01	239.2

Page 2

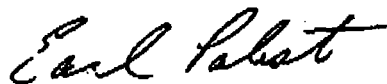
Lab Number: 01-D4025

Sample Number: 0139605

October 19, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holsen, Governor • Stephen M. Maheshwari, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number:	0139606
Lab Number:	01-D4026

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: LOT ALONG HILL STREET  
 "BRASS RAIL" PARKING LOT  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	4,120	ug/kg	10/16/01	206.2
Barium, Total	226,000	ug/kg	10/16/01	200.7
Cadmium, Total	4,290	ug/kg	10/16/01	200.7
Chromium, Total	6,710	ug/kg	10/16/01	200.7
Mercury, Total	< 40.0	ug/kg	10/18/01	245.1
Lead, Total	539,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Lead, TCLP	3.64	ppm	10/19/01	239.2

Page 2

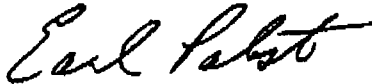
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Sample Number: 0139606

October 19, 2001

Metals results are reported on a dry weight basis

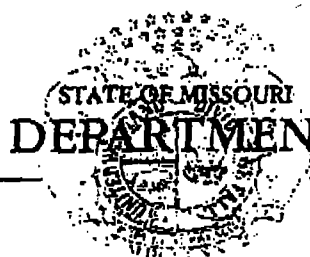
The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP





Bob Holden, Governor • Stephen M. Mahfood, Director

**DEPARTMENT OF NATURAL RESOURCES**

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

**ENVIRONMENTAL SERVICES PROGRAM****RESULTS OF SAMPLE ANALYSES**

Sample Number:	0139607
Lab Number:	01-D4027

Reported To: LARRY LEHMAN  
Affiliation: ESP  
LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
Date Collected: 10/11/01  
Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
Sampling Location: HERCULANEUM  
Sample Description: 468 GROOVE STREET FILL AREA  
UPGRADIENT PORTION OF FILL AREA  
County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	10,200	ug/kg	10/16/01	206.2
Barium, Total	290,000	ug/kg	10/16/01	200.7
Cadmium, Total	10,300	ug/kg	10/16/01	200.7
Chromium, Total	35,400	ug/kg	10/16/01	200.7
Mercury, Total	147	ug/kg	10/18/01	245.1
Lead, Total	872,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Lead, TCLP	0.20	ppm	10/19/01	239.2

Page 2

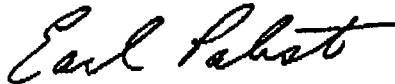
Lab Number: 01-D4027

Sample Number: 0139607

October 19, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holden, Governor • Stephen M. Mahood, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number: 0139608
Lab Number: 01-D4023

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QERCA/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: SCHOOL AND DATE STEET FILL AREA  
 TOP PORTION OF FILL AREA  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Silver, Total	< 1,000	ug/kg	10/16/01	200.7
Arsenic, Total	7,600	ug/kg	10/16/01	206.2
Barium, Total	173,000	ug/kg	10/16/01	200.7
Cadmium, Total	17,100	ug/kg	10/16/01	200.7
Chromium, Total	20,800	ug/kg	10/16/01	200.7
Mercury, Total	300	ug/kg	10/18/01	245.1
Lead, Total	2,220,000	ug/kg	10/16/01	239.2
Selenium, Total	< 2,000	ug/kg	10/16/01	270.2
Cadmium, TCLP	0.19	ppm	10/19/01	200.7
Lead, TCLP	3.69	ppm	10/19/01	239.2

Page 2

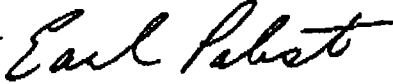
Lab Number: 01-D4023

Sample Number: 0139608

October 19, 2001

Metals results are reported on a dry weight basis
---

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: KATHY FLIPPIN, HWP



Bob Holden, Governor • Stephen M. Mahood, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number:	0139609
Lab Number:	01-D4028

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QEEJS/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: HERCULANEUM STORMWATER OUTFALL NEAR  
 THE TREATMENT PLANT  
 County: JEFFERSON

Analysis Performed	Results	Analyzed	Method
Sulfate	31.8 mg/L	10/18/01	375.2
Chloride	9.10 mg/L	10/18/01	325.2
Arsenic, Dissolved	2.3 ug/L	10/17/01	206.2
Cadmium, Dissolved	62.2 ug/L	10/17/01	200.7
Cobalt, Dissolved	3.55 ug/L	10/17/01	200.7
Copper, Dissolved	12.7 ug/L	10/17/01	200.7
Mercury, Dissolved	< 0.20 ug/L	10/19/01	245.1
Nickel, Dissolved	18.8 ug/L	10/17/01	200.7
Lead, Dissolved	490 ug/L	10/17/01	239.2
Thallium, Dissolved	2.52 ug/L	10/17/01	279.2
Zinc, Dissolved	263 ug/L	10/17/01	200.7
Arsenic, Total	7.1 ug/L	10/17/01	206.2
Cadmium, Total	77.6 ug/L	10/17/01	200.7
Cobalt, Total	8.47 ug/L	10/17/01	200.7
Copper, Total	89.6 ug/L	10/17/01	200.7
Mercury, Total	< 0.20 ug/L	10/19/01	245.1
Nickel, Total	28.5 ug/L	10/17/01	200.7
Lead, Total	3,360 ug/L	10/17/01	239.2
Thallium, Total	3.12 ug/L	10/17/01	239.2
Zinc, Total	471 ug/L	10/17/01	200.7

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Lab Number: 01-D4028  
Sample Number: 0139609  
October 19, 2001

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: ALAN REINKEMEYER, ESP

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

Bob Holden, Governor • Stephen M. Matlack, Director

DIVISION OF ENVIRONMENTAL QUALITY  
 P.O. Box 176 Jefferson City, MO 65102-0176

**ENVIRONMENTAL SERVICES PROGRAM**

**RESULTS OF SAMPLE ANALYSES**

**\*\* Modified Report \*\***

Sample Number: 0139610  
 Lab Number: 01-D4031

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QEEJS/NJ02DOER

Report Date: 11/ 5/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: HERCULANEUM  
 Sample Description: HERCULANEUM STORMWATER OUTFALL NEAR  
 THE TREATMENT PLANT  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Arsenic, Total	28,900	ug/kg	10/16/01	206.2
Cadmium, Total	90,200	ug/kg	10/16/01	200.7
Cobalt, Total	115,000	ug/kg	10/16/01	200.7
Copper, Total	523,000	ug/kg	10/16/01	200.7
Mercury, Total	219	ug/kg	10/18/01	245.1
Nickel, Total	107,000	ug/kg	10/16/01	200.7
Lead, Total	26,400,000	ug/kg	10/16/01	239.2
Thallium, Total	< 2,000	ug/kg	10/16/01	279.2
Zinc, Total	5,440,000	ug/kg	10/16/01	200.7
Cadmium, TCLP	1.28	ppm	11/ 1/01	200.7
Lead, TCLP	149	ppm	11/ 1/01	239.2

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Lab Number: 01-D4031

Sample Number: 0139610

November 5, 2001

Metals results are reported on a dry weight basis

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: ALAN REINKEMEYER, ESP

\*\*This report has been revised to add or modify the ANALYTES.  
Please remove the original report from your files and replace it  
with this modified report.





Bob Holden, Governor • Stephen M. Mahood, Director

## DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

## RESULTS OF SAMPLE ANALYSES

Sample Number:	0139611
Lab Number:	01-D4029

Reported To: LARRY LEHMAN  
 Affiliation: ESP  
 LDPR/Job-Project: QECMP/NJ02DOER

Report Date: 10/19/01  
 Date Collected: 10/11/01  
 Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
 Sampling Location: DOE RUN-HERCULANEUM  
 Sample Description: NPDES OUTFALL 003  
 County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Sulfate	153	mg/L	10/18/01	375.2
Chloride	27.9	mg/L	10/18/01	325.2
Arsenic, Dissolved	2.3	ug/L	10/17/01	206.2
Cadmium, Dissolved	< 1.00	ug/L	10/17/01	200.7
Cobalt, Dissolved	< 2.50	ug/L	10/17/01	200.7
Copper, Dissolved	< 10.0	ug/L	10/17/01	200.7
Mercury, Dissolved	< 0.20	ug/L	10/19/01	245.1
Nickel, Dissolved	< 5.00	ug/L	10/17/01	200.7
Lead, Dissolved	< 2.5	ug/L	10/17/01	239.2
Thallium, Dissolved	< 1.00	ug/L	10/17/01	279.2
Zinc, Dissolved	< 10.0	ug/L	10/17/01	200.7
Arsenic, Total	2.7	ug/L	10/17/01	206.2
Cadmium, Total	< 2.50	ug/L	10/17/01	200.7
Cobalt, Total	< 2.50	ug/L	10/17/01	200.7
Copper, Total	< 50.0	ug/L	10/17/01	200.7
Mercury, Total	< 0.20	ug/L	10/19/01	245.1
Nickel, Total	< 5.00	ug/L	10/17/01	200.7
Lead, Total	< 2.5	ug/L	10/17/01	239.2
Thallium, Total	< 1.00	ug/L	10/17/01	239.2
Zinc, Total	< 10.0	ug/L	10/17/01	200.7

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Lab Number: 01-D4029

Sample Number: 0139611

October 19, 2001

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: CURTIS GATELEY, WPC



Bob Holden, Governor • Stephen M. Mahood, Director

# DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY  
P.O. Box 176 Jefferson City, MO 65102-0176

## ENVIRONMENTAL SERVICES PROGRAM

### RESULTS OF SAMPLE ANALYSES

Sample Number: 0139612  
Lab Number: 01-D4030

Reported To: LARRY LEHMAN  
Affiliation: ESP  
LDPR/Job-Project: QECMP/NJ02DOER

Report Date: 10/19/01  
Date Collected: 10/11/01  
Date Received: 10/12/01

Sample Collected by: LARRY LEHMAN, ESP  
Sampling Location: DOE RUN-HERCULANEUM  
Sample Description: NPDES OUTFALL 001  
County: JEFFERSON

Analysis Performed	Results		Analyzed	Method
Sulfate	1,080	mg/L	10/18/01	375.2
Chloride	63.0	mg/L	10/18/01	325.2
Arsenic, Dissolved	1.2	ug/L	10/17/01	206.2
Cadmium, Dissolved	3.88	ug/L	10/17/01	200.7
Cobalt, Dissolved	< 2.50	ug/L	10/17/01	200.7
Copper, Dissolved	< 10.0	ug/L	10/17/01	200.7
Mercury, Dissolved	< 0.20	ug/L	10/19/01	245.1
Nickel, Dissolved	< 5.00	ug/L	10/17/01	200.7
Lead, Dissolved	4.2	ug/L	10/17/01	239.2
Thallium, Dissolved	743	ug/L	10/17/01	279.2
Zinc, Dissolved	< 10.0	ug/L	10/17/01	200.7
Arsenic, Total	< 1.2	ug/L	10/17/01	206.2
Cadmium, Total	6.15	ug/L	10/17/01	200.7
Cobalt, Total	< 2.50	ug/L	10/17/01	200.7
Copper, Total	< 50.0	ug/L	10/17/01	200.7
Mercury, Total	< 0.20	ug/L	10/19/01	245.1
Nickel, Total	< 5.00	ug/L	10/17/01	200.7
Lead, Total	27.5	ug/L	10/17/01	239.2
Thallium, Total	727	ug/L	10/17/01	239.2
Zinc, Total	14.7	ug/L	10/17/01	200.7

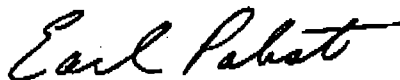
Page 2

Lab Number: 01-D4030

Sample Number: 0139612

October 19, 2001

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.



Earl Pabst, Program Director  
Environmental Services Program  
Air and Land Protection Division

c: CURTIS GATELEY, WPC